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EXAMINER

HOPKINS, ROBERT A

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/601,390

Applicant(s)

WAKAYAMA ET AL.

Examiner

Robert A Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 17 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-8 and 17 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that original claims 1-11 as filed in the international application(PCT/JP98/05807) included an examination on all the claims, and therefore at least groups I and III should be similarly examined in this instance. This is not found persuasive because examination of all of the claims in an international application does not mean that examination of all the claims in a corresponding national stage application is required. Examiner is allowed to make an election/restriction requirement in a national stage application irrespective of the action of the examiner in the international application( which in the current case the examiner was from the Japanese Patent Office). Furthermore, as noted in the election/restriction requirement dated 9-28-01, the groups are clearly to different inventive concepts, and therefore restriction is proper. .

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 9-16 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Warburton, Jr(4291087).

Warburton, Jr teaches a filter medium(column 1 lines 21-22) for an air filter having fibers bound together by a binder to form a non-woven fabric, characterized in that the binder has its main ingredient a polymer dispersion(column 6 line 31) having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water(column 8 lines 5-13; column 8 lines 64-69). Warburton, Jr further teaches wherein the copolymer is polymerized by using an organic peroxide as a polymerization initiator(column 11 line 26-28).

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by DiStefano(4859527).

DiStefano teaches a filter medium(column 13 lines 17) for an air filter having fibers bound together by a binder to form a non-woven fabric, characterized in that the binder has its main ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water(column 3 lines 35-38).

DiStefano further teaches wherein the copolymer is polymerized by using an organic

peroxide as a polymerization initiator. DiStefano further teaches wherein the hydrophilic monomer is acrylic acid and the hydrophobic monomer is ethylene.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Distler(3944690).

Distler teaches a non-woven fabric having fibers bound together by a binder, characterized in that the binder has its main ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water(column 3 lines 8-11,14, and 15). Distler further teaches wherein the copolymer is polymerized by using an organic peroxide as a polymerization initiator. Distler further teaches wherein the hydrophilic monomer is methacrylate and the hydrophobic monomer is styrene.

Claims 4-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Distler(3944690).

Distler teaches a method for manufacturing a non-woven fabric, the non woven fabric formed by binding fibers by a binder, characterized in that the binder has its chief ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water. Distler further teaches wherein the copolymer is polymerized by using an organic peroxide as a polymerization initiator. Distler further teaches wherein the hydrophilic monomer is methacrylate and the hydrophobic monomer is styrene.

Claims 4-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by DiStefano(4859527).

DiStefano teaches a method for manufacturing a non-woven fabric, the non woven fabric formed by binding fibers by a binder, characterized in that the binder has its chief ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water. DiStefano further teaches wherein the copolymer is polymerized by using an organic peroxide as a polymerization initiator. DiStefano further teaches wherein the hydrophilic monomer is acrylic acid and the hydrophobic monomer is ethylene.

Claims 4 and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Warburton, Jr(4291087)

Warburton, Jr teaches a method for manufacturing a non-woven fabric, the non woven fabric formed by binding fibers by a binder, characterized in that the binder has its chief ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water. Warburton, Jr further teaches wherein the copolymer is polymerized by using an organic peroxide as a polymerization initiator.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warburton, Jr(4291087).

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Warburton, Jr teaches all of the limitations of claims 3 and 6 but is silent as to wherein the hydrophilic monomer is at least one selected from acrylic acid, methacrylate, and methallyl sulfonate. Warburton, Jr in column 11 example 8 discloses a copolymer binder of butyl acrylate and styrene. Examiner respectfully submits that methacrylate and butyl acrylate have similar hydrophilic properties with the exception of an additional carbon atom in butyl acrylate. Therefore, it would have been obvious to someone of ordinary skill in the art at the time of the invention through routine experimentation to substitute methacrylate for butyl acrylate in the copolymer of example 8 in order to provide for a polymer dispersion which has equivalent properties of non-toxicity(column 8 lines 64-68).

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Warburton, Jr(4291087) or DiStefano(4859527).

Warburton, Jr and DiStefano both disclose a filter medium for an air filter having fibers bound together by a binder to form a non-woven fabric, characterized in that the binder has its main ingredient a polymer dispersion having a copolymer of a hydrophilic monomer and a hydrophobic monomer dispersed in water. Both Warburton, Jr and DiStefano are silent as to a frame and a sealing material incapable of generating gaseous organic substances. Examiner respectfully submits that aluminum filter frames and as mentioned sealing materials incapable of generating gaseous organic substances are well known in the filtration art , therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a frame and a sealing material incapable of generating gaseous organic substances for the filter

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material of Warburton, Jr and DiStefano in order to provide for a filter material, frame, and sealing material which are free of gaseous organic substances.

***Allowable Subject Matter***

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

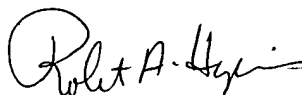
Claim 7 recites "and wherein volatile organic substances are removed from said polymer dispersion by any one treatment of vacuum suction, aeration, nitrogen purging, and steam injection". Warburton, Jr discloses using a polymeric binder which is produced from monomers which are free of safety and toxicity problems, however Warburton, Jr does not disclose using any one of vacuum suction, aeration, nitrogen purging, and steam injection to remove volatile organic substances from the polymer dispersion. Therefore, it would not have been obvious to someone of ordinary skill in the art at the time of the invention to including a step of removing volatile organic substances from the polymer dispersion of Warburton, Jr by any one of vacuum suction, aeration, nitrogen purging, and steam injection because Warburton, Jr does not suggest such a modification.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A Hopkins whose telephone number is 703-308-3913. The examiner can normally be reached on Monday-Friday 9:00am-3:00pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on 703-308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9572 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Robert A Hopkins  
Primary Examiner  
Art Unit 1724

rah  
February 19, 2002